Research on Patient-Level and Aggregate Data Reporting in PCMH Programs

Dr. Douglas Wholey, PhD of the University of Minnesota, independent investigator for the Minnesota Health Care Home evaluation and Dr. Leif Solberg, principal investigator and co-principal investigator on five large National Institutes of Health/Agency for Healthcare Research and Quality (AHRQ) grants provided the following justification for patient-level data in evaluation a PCMH program. Dr. Solberg is currently involved in eight research projects. He has published more than 187 articles in peer-reviewed journals and 31 books.

- PCMHs are designed to produce patient-centered and coordinated care for patients with complex needs; in order to understand the mechanisms to evaluate a PCMH program, patient-level data is required.
- Patient-level data allows evaluators to look at clusters of patients and subgroups to determine if there is evidence of disparities, patient severity, whether race or gender affects quality of care, and how PCMHs differ based on geographic effects.
- ***Patient-level data is critical to the evaluation of PCMH because patients are clustered within clinics which results in the errors not being independent and identically distributed and the results in biased standard error estimates.***
- Researchers can limit potential bias due to omitted variables by including clinic and individual patient-level data. In addition, research shows that patient variation explains a large part of quality of care.
- Patient-level data is the best for researchers doing evaluation work on health and health care related industries. In order to achieve reliable research results with face validity, patient level data is critical for the evaluation of PCMH.

Key Points:

By following these recommendations, future studies of the PCMH can generate high-quality, reliable evidence about the effectiveness of medical homes.

• Focus evaluations on quality, cost, and experience.

• Include comparison practices.

• **Recognize that the PCMH is a practice-level intervention and account for clustering.**

• Include as many intervention practices as possible.

• Be strategic in identifying the right samples of patients to answer each evaluation question.

• Rethink the number of patients from whom data are collected to answer key evaluation questions.

Recognize that the PCMH is a practice-level intervention:

Because the intervention affects all patients in a practice, evaluations need to account for clustering. Clustering occurs when outcomes for patients within a practice (that is, a cluster) are more similar to each other than to outcomes for patients in other practices, because of systematic differences between the practices. ***If clustering is ignored, the likelihood of concluding that an intervention works when it does not can be very large.***

For example: If a practice with 100 patients submits aggregated data showing a high level of their patients have their blood pressure under control and a practice with 50 patients submits data showing a low level of controlled blood pressure, the data is skewed to look much better than it actually is.